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Pictorial Depiction of the Lying-down Behavior of Lamé and Non-lamé Multiparous Gestating Sows

A.S. Leaflet R3021

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Summary and Implications

This study was designed to pictorially depict and compare the lying-down sequence (i.e. postures adopted and movements during the process) in non-lamé versus lamé gestating sows. Ten multiparous sows (average parity 3.5 ± 1.6) with different degrees of lameness (lameness assessed on a 6 point scale where 0 =normal to 5 = severely lamé, will not stand/move) were video recorded in a gestation pen during one lying-down event to identify the postures and movements adopted during the lying-down sequence. There was no difference among lameness scores in the postures or movements during the lying-down sequence of the observed sows except for the sow classified as severely lamé (i.e. lameness score = 4) that showed uncontrolled lying-down behavior and finished the lying-down sequence on a “dog sitting” position. Results suggest that lameness score does not greatly affect the lying-down sequence when space restriction is not an issue. However, this could be due to the limited sample size and/or that lameness recorded in this study was not severe enough to affect lying-down behavior.

Introduction

There are few studies in the scientific literature regarding the lying-down behavior of sows; and there are even fewer studies about the impact of lameness on the lying-down sequence. Two independent studies reported that sows with moderate to severe lameness were more likely to show uncontrolled lying-down behavior; and, a negative correlation between latency to lie-down (i.e. time standing until successfully lie-down) and lameness score was reported. However, to our knowledge, there are no studies describing the actual lying-down sequence (i.e. postures adopted and movements during the process) in lamé versus non-lamé sows when they do not face space restriction. Furthermore, there is no pictorial depiction of the lying-down sequence of lamé and non-lamé sows. Therefore, the objective of this study was to identify the different postures and movements adapted by gestating sows displaying different degrees of lameness during the lying-down sequence.

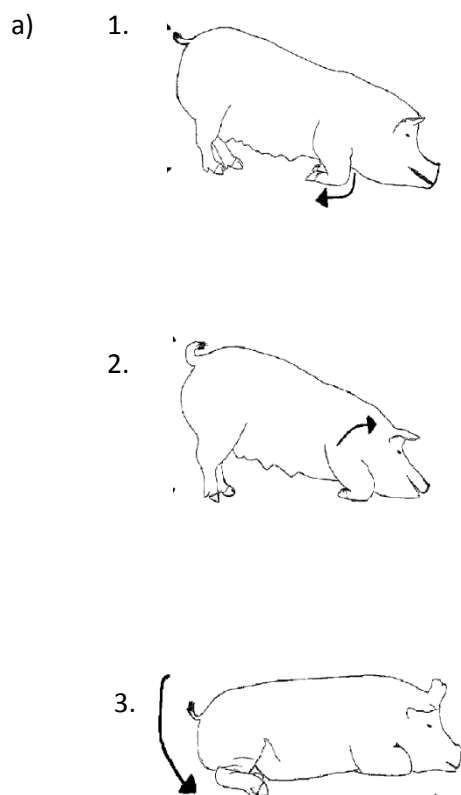
Materials and Methods

Ten multiparous sows (average parity 3.5 ± 1.6) with different degrees of lameness on the rear legs (lameness assessed on a 6 point scale where 0 =normal to 5 = severely lamé, will not stand/move) were used for this study. Two sows were sound (i.e. score 0), 2 sows had a lameness score of 1 (i.e. general stiffness, none lamé), 3 sows had a score of 2 (i.e. mildly lamé), 2 sows had a score of 3 (i.e. lamé, could not place weight on affected limb) and 1 sow had a score of 4 (i.e. severely lamé). Sows were removed from their gestation stalls and moved to a gestation pen where they were video recorded for one lying-down event after feeding time. The digital video camera was positioned at the rear of the individual pen; hence, the profile of the sow was visible. Each sow was recorded individually. Observations ceased when the sow successfully completed the lying lying-down sequence. Videos were analyzed using a computer software (AVcutty v3.5, Andreas von Damaros, Krefeld, Germany, www.avcutty.de) and postures and movements that occurred during the lying-down sequence were identified. Finally, a set of three images per sow were selected to pictorially depict the lying-down sequence.

Results and Discussion

The previously described lying-down sequence by Seaton Baxter in 1984 states that i) the sow drops into a kneeling position, ii) then the sow rotates the upper part of her body to bring a shoulder and side of the head to rest on to the floor and iii) finally, the sow lowers her hindquarters and finishes in either ventral or lateral recumbency. It has been proposed that on gestating sows, locomotion ability would cause few problems, if any, to the “normal” lying-down sequence unless space is restricted. In the present study, we observed no differences among lameness scores in the different postures or movements during the lying-down sequence of the observed sows except for the sow that received a lameness score of 4 (i.e. severely lamé) that showed uncontrolled lying-down behavior and finished the lying-down sequence on a “dog sitting” position (Figure 1) which is regarded as a deviation from the normal lying-down sequence. Results suggest that lameness score does not greatly affect lying-down behavior when space restriction is not an issue. However, this could be due to the limited sample size and/or that lameness recorded in this study was not severe enough to affect lying-down behavior. Further studies are required using a greater sample size that is more representative of all lameness scores. Overall, the use of video imaging could be used to characterize the lying-down sequence and other lying-down behavior parameters such as latency, time and number of attempts to lie-down in lamé sows.

Sows score 0 to 3



Sow score 4

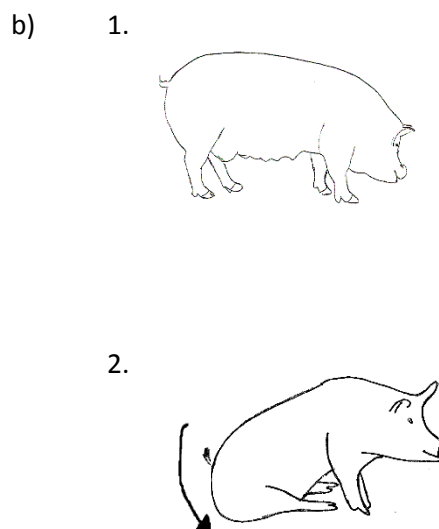


Figure 1. Lying down sequence of sows with different lames scores: a) 1. Kneeling; 2. Shoulder rotation; 3. Lower hindquarters and Sow lands on floor; b) 1. Sow is standing; 2. Sow “dog sit” and lands on floor